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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/808,540	03/25/2004	Ryu Ohtaguro	Q80708	4872
65565 7590 01/18/2007 SUGHRUE-265550 2100 PENNSYLVANIA AVE. NW WASHINGTON, DC 20037-3213			EXAMINER ROSASCO, STEPHEN D	
			ART UNIT	PAPER NUMBER
			1756	
SHORTENED STATUTORY PERIOD OF RESPONSE		MAIL DATE	DELIVERY MODE	
3 MONTHS		01/18/2007	PAPER	

**Please find below and/or attached an Office communication concerning this application or proceeding.**

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

## Office Action Summary

Application No.

10/808,540

Applicant(s)

OHTAGURO ET AL.

Examiner

Stephen Rosasco

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 15 December 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-14 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-14 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 04 August 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/SB/08)  
Paper No(s)/Mail Date 3/25/04.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_.

### Detailed Action

Claims are objected to because of the following informalities:

Claim 1 – reads, “A substrate for a substrate”, second occurrence should be mask as based on the other claims. But even “substrate for a mask” is unclear. It is a substrate for making a mask; language along these lines would be more accurate.

The claims also use the terms “top” and “back” to refer to the substrate, however, it is unclear from the specification and the drawings which are not labeled with these terms if the back refers to the side opposite the top or is it a side surface. If it is the side opposite the “top” then the term –bottom– would have been more appropriate.

Appropriate correction is required.

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-10 are rejected under 35 U.S.C. 102(b) as being anticipated by Takahashi et al. (6,096,405).

Takahashi et al. teach (col. 8, lines 1-24) the limitations of claims 1-14.

The surface roughness (Ra, Rmax) of the peripheral side area 2 of the glass substrate 1 at the intermediate region (chamfered portion) B (length: 0.15 mm), the intermediate region (chamfered portion) C (length: 0.15 mm) and the side end wall A (length: 0.35 mm) are shown in Table 1. In Table 1, the surface roughness Ra of the intermediate region B is 0.2  $\mu\text{m}$ , while the surface roughness Rmax of the intermediate

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region B is 1.9  $\mu\text{m}$ . Further, the surface roughness  $R_a$  of the intermediate region C is 0.15  $\mu\text{m}$ , while the surface roughness  $R_{\text{max}}$  of the intermediate region C is 2.9  $\mu\text{m}$ . In addition, the surface roughness  $R_a$  of the side end wall A is 0.35  $\mu\text{m}$ , while the surface roughness  $R_{\text{max}}$  of the side end wall A is 3.4  $\mu\text{m}$ . Also, the principal surface 3 of the glass substrate 1 has the surface roughness  $R_a$  of 0.5-1 nm.

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tanabe (6,555,273) in view of Takahashi et al. (6,096,405).

The claimed invention is directed to a substrate for substrate comprising: a top surface and a back surface, the surfaces being square in shape; an end surface formed along the thickness thereof; and a chamfered surface formed on a perimeter edge region where the end surface and the top surface meet and another region where the end surface and the back surface meet, wherein a size of the perimeter edge of the substrate is 300 mm or more on a side and the end surface and the chamfered surface each has a roughened surface having a surface roughness ( $R_a$ ) ranging from 0.03-0.3  $\mu\text{m}$ .

And wherein the end surface and the chamfered surface each has a roughened surface having a surface roughness ( $R_a$ ) ranging from 0.05-0.3  $\mu\text{m}$ .

Tanabe teaches (see claims and Fig. 1F) a method of manufacturing a photomask blank by preparing a glass substrate for the photomask blank and depositing a thin film having at least a light shielding function on a principal surface of the glass substrate, wherein the surface of said glass substrate includes at least a pair of principal surfaces parallel to each other, at least a pair of side surfaces perpendicular to the principal surfaces, and at least one chamfered surface interposed between a principal surface and at least one side surface, said principal and said side surfaces being subjected to precision polishing.

The teachings of Tanabe differ from those of the applicant in that the applicant teaches a specific surface roughness for the substrate surfaces and edges.

Takahashi et al. teach (col. 8, lines 1-24) the limitations of claims 1-14.

The surface roughness ( $R_a$ ,  $R_{max}$ ) of the peripheral side area 2 of the glass substrate 1 at the intermediate region (chamfered portion) B (length: 0.15 mm), the intermediate region (chamfered portion) C (length: 0.15 mm) and the side end wall A (length: 0.35 mm) are shown in Table 1. In Table 1, the surface roughness  $R_a$  of the intermediate region B is 0.2  $\mu\text{m}$ , while the surface roughness  $R_{max}$  of the intermediate region B is 1.9  $\mu\text{m}$ . Further, the surface roughness  $R_a$  of the intermediate region C is 0.15  $\mu\text{m}$ , while the surface roughness  $R_{max}$  of the intermediate region C is 2.9  $\mu\text{m}$ . In addition, the surface roughness  $R_a$  of the side end wall A is 0.35  $\mu\text{m}$ , while the surface roughness  $R_{max}$  of the side end wall A is 3.4  $\mu\text{m}$ . Also, the principal surface 3 of the glass substrate 1 has the surface roughness  $R_a$  of 0.5-1 nm.

Takahashi et al. also teach that with this structure, no particles are generated from the peripheral side area because the side end surface of the glass substrate is mirror

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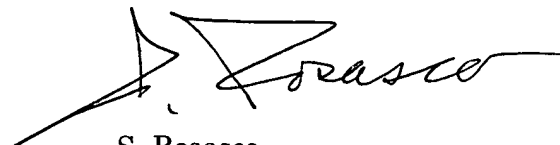
finished. Consequently, reproduction is performed without reproduction errors because of no generation of a thermal asperity and a head crash can be sufficiently avoided because of no projections which might result from the particles.

Therefore, it would have been obvious to one having ordinary skill in the art to take the teachings of Tanabe and combine them with the teachings of Takahashi et al. in order to make the claimed invention because the teachings of Takahashi et al. are directed to the same benefit to which the claimed invention is directed.

### *Conclusion*

Any inquiry concerning this communication or earlier communications from the Examiner should be directed to Stephen Rosasco whose telephone number is (571) 272-1389. The Examiner can normally be reached Monday-Friday, from 8:00 AM to 4:30 PM. The Examiner's supervisor, Mark Huff, can be reached on (571) 272-1385. The fax phone number for the organization where this application or proceeding is assigned is (571) 273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



S. Rosasco  
Primary Examiner  
Art Unit 1756

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1/09/07